ROSES Competitions and the MODIS and (Suomi NPP) VIIRS Science Teams

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ROSES 2013 A.28 The Science of Terra and Aqua & A.46 Terra and Aqua: Algorithms – Existing Data Products

- **A.46 - Terra and Aqua Algorithms – Existing Data Products (4-year)**
  - **Evolution and migration to the Senior Review proposals (2017)**
  - **Statistics - A. 46 Proposals Recommended: 32/38 ($19.4M/4 yrs selected - $5.2/5.4/5.0/3.8M)**
- **A.28 – The Science of Terra and Aqua - recompetition in ROSES 2016**
  - **2.1 Science Data Analysis**
  - **2.1.1 Multiplatform and Sensor Data Fusion**
  - **2.2 Algorithms – New Data Products**
  - **2.3 Real- or Near-Real-Time Data Algorithms**
  - **Statistics - A. 28 Proposals Recommended: 56/212 ($34.96M/3 yrs selected - $11.5 /11.7 / 11.75M)**

- **Total Selected budget profile A.46 & A.28 of $16.7M / 17.1 / 16.75 / 3.8M**
  - **Advertised $14M / yr combined**
  - **Implemented profile was $23 / 14 / 14 / 3.8M (FY14/FY15/FY16/FY17)**

  - **Historical data:**
    - **2003: 566 proposals received – 192 selected - $66M/yr advertised**
    - **2006: 322 proposals received – 121 selected - $25M/yr advertised**
    - **2009: 325 proposals received – 101 selected - $17M/yr ($15M Adv)**
    - **2013: 248 proposals received – 88 selected - $23/14/14/3.8M /yr ($14M Adv)**

Scientific Challenges for SR Transition plus next Program Element(s)

- **Transition core standard algorithms (A.46) to the Senior Review – (4-year proposals)**
  - Roll algorithm maintenance work into SR - how to do it fairly and keep costs down to real maintenance work
  - Each proposal should clearly identify the algorithm(s) being proposed
  - Algorithm history must be clear
  - Is the approach the "state-of-the-art"?
  - Examine and understand why there is such a huge range of cost ($50-550K/yr) associated with the individual core algorithm proposals and MINOR associated calibration/validation activities
  - What budget gets transitioned to Senior Review?
    - 2009 - $15M/yr available, 21 algorithm proposals selected (over 1/3 of available budget)
    - 2013 – $2.5M/yr available, 32/38 selected (nearly double the $2.5M advertised budget)
  - Does this hold for all instruments – meaning can we easily identify those algorithms and minor calibration/ validation activities ready for transition to Senior Review?
    - Five instruments on Terra (ASTER, CERES, MISR, MODIS, and MOPITT) plus four on Aqua (AIRS, AMSU, CERES, and MODIS) collectively contribute to 81 calibrated & validated core data products
- Orphaned algorithms and other activities that were not recommended:
  - MODIS Oceans NPP
  - MODIS Near-IR water vapor and cirrus reflectance
  - Validation of VI (MOD13)
  - Evaluate / improve MOD16 ET product
  - AIRS NH3
  - MODIS Angstrom Exponent
  - Surface Emissivity

ROSES 2016/2017 Plan for A.28 The Science of Terra and Aqua & A.46 Terra and Aqua: Algorithms – Existing Data Products

- **A.46 - Terra and Aqua Algorithms – Existing Data Products (4-year, FY14-17, advertised at $2.5M/yr)**
  - **Statistics – A.46 Proposals Recommended: 32/38 ($19.4M/4 yrs selected - $5.2/5.4/5.0/3.8M)**
  - **Migration to the Senior Review proposals (2017)**
  - **Estimate of $3-4M/yr of core T&A budget to be transitioned**
  - **Thought: will Suomi NPP be included in the Senior Review? If so, then are any of the algorithms funded in 2013 ready for Senior Review transition?**

- **A.28 – The Science of Terra and Aqua - recompetition in ROSES 2016**
  - **2.1 Science Data Analysis**
  - **2.1.1 Multiplatform and Sensor Data Fusion**
  - **2.2 Algorithms – New Data Products**
  - **2.3 Real- or Near-Real-Time Data Algorithms**
  - **Statistics - A. 28 Proposals Recommended: 56/212 ($34.96M/3 yrs selected - $11.5 /11.7 / 11.75M)**
  - **Thought: could lump analogue Suomi NPP science (not SIPS) in with A.28**

- **Total budget profile of 2013 A. 46/A. 28 T&A selections of $16.7M / 17.1 / 16.75 / 3.8M**
  - **Advertised $14M / yr combined.**
  - **Implementation Profile was $23 / 14 / 14 / 3.8M**
  - **MAJOR issue in the uncosted carryover due to funding YRS 1 & 2 up front (FY14)**

Suomi NPP Proposals Solicited

This solicitation requested:

1. Proposals from members of the scientific community to participate in the NASA Suomi NPP Science Team

- Development of science quality standard data products using Suomi NPP measurements that will enable continuity of key standard Earth system data records from NASA's EOS Terra, Aqua, and/or Aura satellites
- Development and demonstration of innovative and practical applications of Suomi NPP measurements
- Development of other new science data products from Suomi NPP measurements that will meet high-priority Earth science needs
- Suomi NPP Science Team Leader and Discipline Leads

2. Proposals for the establishment of Science Investigator-led Processing Systems (SIPS) to produce NASA Suomi NPP standard and experimental science data products

Proposals Selected: Science Team - 40 of 113; SIPS - 5 of 6 (119 proposals received)

Discipline Leads for VIIRS: Bryan Baum (atm), Chris Justice (land), Carlos DelCastillo (oceans)

ROSES 2016/2017 - A.28 The Science of Terra and Aqua, A.46 Terra and Aqua: Algorithms – Existing Data Products + A.29 Suomi NPP

- **The Science of Terra and Aqua (advertised and funded at ~$11.5M/yr for three years, mostly FY14-16 with some FY17 labor requests, ~$9.9M at large in FY17), plus the Suomi NPP (advertised at $8.0M/yr and funded at ~$10M/yr for three years, FY15-17, plus the five SIPS at an additional ~$7.5M/yr for four years but with phased funding, FY14-17, ~$4.9M at large in FY17) could be merged in to one call.**

Could be done with blended topics such as:

1. **Science Data Analysis (including and stressing topic on Multiplatform and Sensor Data Fusion)**
2. **Algorithms–New Data Products**
3. **Real-or Near-Real-Time Data Algorithms**

Specific to Suomi NPP is/are:

4. **Developing standard data products for EOS continuity**
5. **SIPS**
6. **Science Team Leader and Five Discipline Groups**

#4 and #6 could be blended with #1-3 in to an omnibus for Terra, Aqua, and Suomi NPP.
OR #4-6 could be called out in separate subelement (Suomi NPP topics only).

ROSES 2016/2017 Plan for A.28 The Science of Terra and Aqua & A.46 Terra and Aqua: Algorithms – Existing Data Products + A.29 Suomi NPP

- **The case could be made for one omnibus program element, with 1-3 combined plus a separate section in the omnibus for the Suomi NPP specifics for 4&6 (only SIPS omitted)**
- **Potential major issues**
  - **a) uncosted carryover,**
  - **b) T&A uses some FY17 ($4.1M) and Suomi NPP uses some FY17 ($4.1M), but could proceed with an omnibus and ask the PIs to reconcile in their proposals how a new proposal that overlaps with an existing, already funded proposal, if selected, can show a division of work and funding in the new proposal (we have done this before with T&A and Suomi NPP),**
  - **c) many PIs will put their eggs in one basket in this situation (proposing to the omnibus) and may lose, so we may have some unfunded folks out there, and**
  - **d) Proposal numbers - submissions may not be additive (The Science of T&A at about 250 plus Suomi NPP at about 119) to some extent, but some reduction overall in numbers as PIs could propose to do T&A, Suomi NPP science (and maybe JPSS ?) in one proposal.**
- **We can discuss the JPSS piece later.**
- **Additional concerns: timing – maybe late calendar 2016 release for the amendment "The Science of Terra and Aqua, Suomi NPP, and JPSS".**

A.29 Suomi NPP Selection Balance Across Science Team Topics

1. Standard Products from Suomi NPP for EOS Continuity: 35 proposals (including 4 focused on cal/val)

    1. Land; including Snow/Ice: 11 proposals
    2. Ocean; SST: 3 Ocean Color: 6 including atmospheric correction
    3. Atmosphere (Clouds & Aerosols) 7 proposals
    4. Ozone; 3 proposals
    5. Sounder; 4 proposals

2. Innovative and Practical Applications of Suomi NPP Data: 2 proposals; Agricultural Monitoring, Air Quality & Public Health

3. Other Data Products: 3 proposals, VIIRS Night Lights, CrIS NH_3 & CO, Ocean Color Data Assimilation

A. 29 Suomi NPP Standard Products (Land)

EOS Standard Level 2 and Level 3 Land Data Products Selected for Suomi NPP:

- Surface Reflectance (Vermote - #86; Next Generation: Lyapustin - # 96)
- Snow Cover (Hall, D. - # 49)
- Land Surface Temperature and Emissivity (Hulley - # 106)
- Land Cover and Dynamics (Dynamics only: Zhang, X - # 87)
- Vegetation Indices (Didan - # 68)
- Fire and Thermal Anomalies (Schroeder - # 29)
- Leaf Area Index (LAI) and Fraction Absorbed Photosynthetically Active Radiation (FPAR) (Myneni - # 9)
- Sea Ice Cover and Ice Surface Temperature (Hall, D. - # 49)
- BRDF (Bi-directional Reflectance Distribution Function) / Albedo (Schaaf - # 94)
- Vegetation Continuous Fields No selection
- Burned Area (Giglio - # 35)

A. 29 Suomi NPP Standard Products (Ocean)

EOS Standard Level 2 and Level 3 Ocean Data Products Selected for Suomi NPP:

- Sea Surface Temperature (Minnett - # 79; Next Generation: Harris - # 41 and Wentz – # 19)
- Aerosol Angstrom Exponent (Franz - #77)
- Aerosol Optical Thickness (Franz - #77)
- Subsurface Chlorophyll *a* Concentration (Gregg - # 38; Hu - # 64; Franz- # 77)
- Diffuse attenuation at 490 nm (Lee - # 56; Franz - # 77)
- Photosynthetically Available Radiation (Frouin - # 3)
- Particulate Inorganic Carbon (Balch - # 33)
- Particulate Organic Carbon No selection
- Remote Sensing Reflectance (Hu - # 64; Franz - # 77)

A. 29 Suomi NPP Standard Products (Atmosphere)

EOS Standard Level 2 and Level 3 Atmosphere Data Products (from MODIS) Selected for Suomi NPP:

- Aerosol Product (Levy - # 43; Hsu - # 20; Next Generation: Lyapustin - # 96)
- Total Precipitable Water (Water Vapor) (Borbas - # 73)
- Cloud Product (Platnick - #26; Baum - #1; Gao - # 45)
- Atmosphere Gridded Product No selection
- Cloud Mask (Platnick - # 26)

Continuity (MODIS to VIIRS2038)

- Goal: Earth System Data Records
- How do we get there?
  - Measurements need to be sustained over decades - consistency
  - Quantify instrument and measurement performance (e.g. calibration, stability)
    - MCST and VCST continuity
  - Need to be able to validate our space-based estimated Earth system properties
  - Acquired from multiple sensors / datasets
    - Aerosols, Clouds, Ocean Chemistry/Biology – PACE (and land capabilities?)
- MODIS-T and A are old
- Suomi NPP VIIRS – "assessments" of continuity data products (& new) underway
- Are all VIIRS created equal (MODIS-T v. MODIS-A)
- Does VIIRS have the capability to produce all MODIS/EOS continuity data products?
  - If it does not, what is the solution?
  - If it does, then great, but there may be challenges to producing a given product (no PI to maintain/improve, time needed for assessment and continuity, etc.)
- Uncertainties associated with data products (more to come…)
- NOAA Data products – different? Better? Worse? Funding?
- Non-US sensors/missions

Terra and Aqua & Suomi NPP VIIRS Algorithm Continuity

- **Orphaned algorithms and other activities that were not recommended/ proposed:**
  - **Oceans NPP**
  - **Near-IR water vapor and cirrus reflectance**
  - **Validation of VI (MOD13)**
  - **Evaluate / improve MOD16 ET product**
  - **AIRS NH3**
  - **MODIS Angstrom Exponent**
  - **Surface Emissivity**
  - **VIIRS:**
  - **Atmosphere Gridded Product**
  - **Land Cover**
  - **Vegetation Continuous Fields**
  - **Atmospheric Pressure Vertical Profiles**
  - **Particulate Organic Carbon**
  - **Aerosols from OMPS**

Do we continue to produce these without an algorithm PI to manage?

For the products that we can attempt MODIS to VIIRS continuity, sounds as if many of these efforts are pushing ahead; however, quality assessments are underway in parallel, and it may be some time….

MODIS-VIIRS Measurement Teams

Historical Philosophy: Continuing/evolving measurement streams, there should be one science team, competed periodically, that provides scientific guidance to present and future missions and for the utilization of past data sets

- Support and focus on Earth System Data Records
- Data system to ensure a “seamless” time series
- Scientific guidance and priorities must represent broad user community (including outside of NASA/U.S.)
- Suomi NPP VIIRS continuity, DS missions, CI missions, international missions
  - T&A/Suomi NPP Competition circa ROSES 2016/2017
- JPSS – VIIRS continuity out to 2038, no plans for NASA ST

ATBD/Data Product Documentation & Reviews

- **ATBD/Data Product Documentation and Reviews:**
  - Documentation on web sites lacking for Sensor/Team/ATBDs/Data – new (and existing?) users (especially in the applied/operational world) need to find the details
  - Could we envision something like this on line:
  - MODIS PRODUCT / CORRESPONDING VIIRS PRODUCT / COMMENTS / NASA funded & RELATED RESEARCH / REFERECES
  - Snow Cover (MOD10A) / Snow Cover (VIIR99) / Loss of spatial resolution, no loss of accuracy / D. Hall currently doing VIIRS error assessment
  - Land: ATBD and User Guides

  MUST list key references – ex. Snow cover see Hall et al 2014, Painter et al 2015

  - PI's maintain algorithm data on central page (MODIS? VIIRS? Pointers)

  - Review of algorithms for new & alternative MODIS (VIIRS) algorithms
  - Is the structure of the original EOS ATBDs needed? Can each disciplinary community propose an approach like the above?
  - New algorithms/data products – draft new proposals, documentation and requirements, follow with review and endorsement by user communities (benchmarking).
  - Is there a need for periodic review of ATBDs/Algorithms off-cycle of the competition?
  - What about the guidance we should include in the next competition?

Outstanding Programmatic/Senior Review Issues – Terra

- **Terra's fuel reserves will drive a question we need to answer by 2017: how important is it to continue the Terra data record (which of course includes MODIS) with a tightly-controlled 10:30 MLT?**
- **Could lower the s/c which leaves it closer to the constellation, but still safe – BUT needs additional waivers for violating international orbital debris standards. If we get waivers, ESMO's new approach will continue to maintain 1030 MLT until 2021, which would give us a 20-year data record with a tightly-controlled, consistent MLT. Total operational lifetime of Terra would be the same (whatever approach used) - post-mission lifetime will increase by 20 years.**
- **Senior Review panel recommended NASA quantify the impact to the CDR quality of the Terra datasets if the MLT drifts off 1030 beginning in 2018, compared to 2021.**
- **Fate of the waiver to extend the Terra mission at the current 705 km altitude.**
  - **Waiver is approved - Terra will maintain the 10:30 MLT for 3 additional years and continue to provide a long term uninterrupted data record.**
  - **Waiver is denied - Terra would continue to collect high quality data of sufficient value to the science community to warrant extension - orbital change would compromise continuity of the stable long term climate record at some level, but additional information necessary to fully assess the significance of this degradation (workshop of stakeholders)**

- **What do we do for a MODIS-quality instrument in the morning orbit when Terra is done?????)**

Scientific Issues for future T&A & Suomi NPP Program Elements

- Algorithm history needs to be clear – continuations requested with no work showing history to core algorithm(s)
- Algorithm improvement needs to be clear – continuations requested with no work showing progress or improvement to uncertainty(ies) in core algorithm(s)
  - All proposals must quantify errors and uncertainties associated with proposed efforts (e.g., the data products themselves, any scientific data analysis, etc.)
  - Or can we just start with assumptions/qualitative analysis?
- Algorithm relevance needs to be clear –people will use the product, but what for?
- Is the approach at the state-of-the-art – is there a better approach/data product NASA should be considering? Do we continue to produce standard products if they are "inferior" or not innovative (think about operational uses and the time it takes to transition a new model to operations)
- What's the cost associated with progress relative to the science return?
- Transition core standard algorithms to the Senior Review
  - A range of cost ($50-550K/yr) with individual core algorithm proposals and MINOR associated calibration/ validation activities
- Can we link current and future sensors, Aqua to Suomi-NPP to JPSS or other mission for continuity?
- Interdisciplinary and multidisciplinary science

Back-Up

Issues for MODIS-VIIRS Science Team

- Terra's future data quality for MODIS assessment in community workshop (waiver on MLT/altitude adjustment)
- Evolution/migration of Existing Algorithms to Senior Review (2013 program element, A.46 as intermediate step) – we have to weigh investments versus potential outcomes
- Continuity of products and orphan products (from MODIS and VIIRS)
- Algorithm developers and validation investigators should continue to address important deficiencies in key data products (uncertainties)
- Algorithm developers need to represent broader community needs by working with them
- How best to facilitate interdisciplinary science and algorithm development approaches, Terra/Aqua intersensor science (2.1.1)
- Established web site(s)/process for regular data product and algorithm reviews -need to maintain, evolve, refine, review data products as needed (but can no longer say "go to the literature")
- MODIS and Suomi NPP VIIRS website and data product documentation – updated and coordinated with discipline leads, team leader, project scientists, and PIs – more user friendly
- Evolution to measurement teams and blend with MODIS-VIIRS Team (w/other mission teams)
- Reprocessing – "staged delivery"

Instrument and Science Measurement Teams

- Additional detailed guidance for the Instrument and Science Measurement Teams were provided in the disciplinary Sections.
- Proposed studies may be relevant to more than one team. Proposals should request membership on the team that, to the best of their knowledge, is most relevant to their research.
- Specific guidance was in each section, and identify if the proposer called out membership in a particular science team
  - Land Measurements Team
  - Ocean Biology and Biogeochemistry Measurement Team (OCRT)
  - Cryospheric Sciences Measurement Team
  - Atmospheric Sciences Measurement Team
  - Geodynamics and Geohazards Research Team
  - Biodiversity and Ecological Forecasting Team
  - Sea Surface Temperature Science Team

Move from Missions to Measurements due to Mission and Science Maturity

ATBD/Data Product Reviews, Documentation

- **ATBD/Data Product Reviews:** Review of algorithms for new & alternative MODIS (VIIRS) algorithms
  - Is the structure of the original EOS ATBDs needed? Is there an alternative approach and would one approach for documenting data products (provisional or continuity) serve all disciplinary communities?
  - New algorithms/data products – draft new proposals, documentation and requirements, follow with review and endorsement by user communities (benchmarking)
  - Is there a need for periodic review of ATBDs/Algorithms off-cycle of the competition?
  - Documentation on web sites lacking for Sensor/Team/ATBDs/Data – new users (applied)

- Could we envision something like this on line:
- MODIS PRODUCT / CORRESPONDING VIIRS PRODUCT / COMMENTS / NASA funded & RELATED RESEARCH / REFERECES
  - Snow Cover (MOD10A) / Snow Cover (VIIR99) / Loss of spatial resolution, no loss of accuracy / D. Hall currently doing VIIRS error assessment
  - Surf. Temp (MOD11x) / Surf Temp (VIIR00) / Loss of spatial resolution, some increase in error / USDA working on merging w/Microwave sensors to create enhance product

MUST list key references – ex. Snow cover see Hall et al 2014, Painter et al 2015

  - PI's maintain algorithm data on central page (MODIS? VIIRS? pointers)

MODIS-VIIRS Measurement Teams

Historical Philosophy: Continuing/evolving measurement streams, there should be one science team, competed periodically, that provides scientific guidance to present and future missions and for the utilization of past data sets

- Support and focus on Earth System Data Records
- Data system to ensure a "seamless" time series
- Scientific guidance and priorities must represent broad user community (including outside of NASA/U.S.)
- Suomi NPP VIIRS continuity, DS missions, CI missions, international missions
  - Thought to jointly compete MODIS and Suomi NPP next round
- Plans for JPSS – VIIRS continuity out to 2038, but plans for a NASA-based Science Team?

Issues for MODIS-VIIRS Science Team

- Terra's future data quality for MODIS assessment in community workshop (waiver on MLT/altitude adjustment)
- Evolution/migration of Existing Algorithms to Senior Review (2013 program element, A.46 as intermediate step) – we have to weigh investments versus potential outcomes
- Continuity of orphan products (from MODIS and VIIRS)
- Algorithm developers and validation investigators should continue to address important deficiencies in key data products (uncertainties)
- Algorithm developers need to represent broader community needs by working with them
- How best to facilitate interdisciplinary science and algorithm development approaches, Terra/Aqua intersensor science (2.1.1)
- Established web site(s)/process for regular data product and algorithm reviews -need to maintain, evolve, refine, review data products as needed (but can no longer say "go to the literature")
- Evolution to measurement teams and blend with MODIS-VIIRS Team (w/other mission teams)
- MODIS and Suomi NPP VIIRS website and data product documentation – updated and coordinated with discipline leads, team leader, project scientists, and PIs – more user friendly

Scientific Issues from T&A Program Elements

- **Reviewer feedback:**
  - **"incremental improvement" – what is this? Is it quantified? What's the cost associated with progress relative to the science return?**
  - **Innovation – maybe, maybe not, but is the work plan justified?**
  - **"approach far from state of the art" – is there a better approach/data product NASA should be considering?**
  - **Continued work showing no history or progress or improvement to uncertainty(ies) in core algorithm(s)**
  - **All proposals submitted in response to T&A and S-NPP solicitations must quantify errors and uncertainties associated with proposed efforts (e.g., the data products themselves, any scientific data analysis, etc.). The error and uncertainty discussion must be clearly identifiable in a separate section within the proposal body. Explicit attention will be given to this section during the review process**
  - **Relevance weak – we know people will use the product, but does the author say anything about it? "x product important for a CDR", but the authors do not describe**
  - **Link to current and future sensors, Suomi-NPP or JPSS or other mission for continuity?**
  - **Cal/Val work – probably the *in situ* component is important but team may not give details or say why**

Standard Products (Ozone)

EOS Standard Level 2 and Level 3 Atmosphere Data Products (from OMPS) Selected for Suomi NPP:

- Total Column Ozone (McPeters - #72)
- Ozone Concentration Vertical Profiles (Bhartia - #21, McPeters - #72)
- Aerosol Concentration Vertical profiles No selection
- NO_2 Total Column (Yang - #13)
- Sulfur Dioxide Total Column (Yang - #13)
- Aerosols Total Column (UV) No selection

Standard Products (Sounder)

EOS Standard Level 2 and Level 3 Sounder Data Products Selected for Suomi NPP:

- **Atmospheric Temperature (vertical profiles) (Barnett - # 28, Susskind - # 99, Lambrigtsen, #39; Next Generation: Moncet - # 82)**
- **Atmospheric Moisture (vertical water vapor profiles, total precipitable water, total cloud liquid water) (Barnett - # 28, Susskind - # 99, Lambrigtsen, #39; Next Generation: Moncet - # 82)**
- **Atmospheric Pressure Vertical Profiles (None)**
- **Surface Temperature (Barnett - # 28, Susskind - # 99, Lambrigtsen, #39; Next Generation: Moncet - # 82)**
- **Cloud Properties (fractional cover, cloud top temperature, cloud top height) (Barnett - # 28, Susskind - # 99, Moncet - # 82)**

Cal/Val, Applications & New Products

- Calibration and validation of VIIRS Surface Reflectance product (Czapla-Myers, #66)
- Validation of VIIRS thermal infrared data and products (Hook, #6)
- Calibration of VIIRS against the moon (Stone, #104)
- CrIS radiometric calibration under cloudy conditions (Aumann, #27)

- Agricultural Monitoring Applications (Justice, #58)
- Air Quality and Public Health Applications (Wang, J., #67)

- VIIRS Nighttime Lights (Elvidge, #120)
- NH_3 and CO from CrIS (Cady-Pereira, #4)
- Combine Data Assimilation with an Algorithm to Improve the Consistency of VIIRS Chlorophyll (Gregg, #38)

Standard Products Not Selected

- Atmosphere Gridded Product
- Land Cover
- Vegetation Continuous Fields
- Atmospheric Pressure Vertical Profiles
- Particulate Organic Carbon
- Aerosols from OMPS

ROSES-2013 A.29 Suomi NPP Statistics

Proposals Due: March 10, 2014
Number Proposals Received: 119
Selection Date: August 12, 2014
Proposals Selected: Science Team - 40 of 113; SIPS - 5 of 6

Science Team PI Distribution (35% success rate):

Universities	17	Other Gov't. Agency	3
NASA Centers	15	Non-Profit:	1
For-Profit Corp.	4		

Product Type Distribution:

EOS Continuity Products (includes cal/val)	35
Innovative and Practical Applications:	2
Other Products	3

SIPS PI Distribution (83% success rate):

Universities	1	NASA Centers	4